Massachusetts Stormwater News

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MassDEP

EPA United States Environmental Protection Agency

STORMWATER OUTREACH IN MASSACHUSETTS

GET THE NEWS!

Massachusetts Stormwater News is a collaborative effort of the Massachusetts Department of Environmental Protection (MassDEP) and the New England office of the U.S. Environmental Protection Agency (U.S. EPA). This newsletter will be sent via email every few months to provide information to municipalities and others related to the Massachusetts Small Municipal Separate Storm Sewer System (MS4) permit. MA Stormwater News will feature topics of interest, provide updates on upcoming permit deadlines, and highlight assistance resources from MassDEP, U.S. EPA and others.

U.S. EPA and MassDEP know that stormwater management is just one of the many challenges facing municipalities. We are committed to working with municipalities as you move forward on permit implementation.

This issue focuses on the Illicit Discharge Detection and Elimination (IDDE) program. We also highlight some assistance and training resources from U.S. EPA and MassDEP.

Implementing an Illicit Discharge Detection and Elimination (IDDE) Program

Illicit discharges[1] carry sewage, industrial contaminants and other pollutants to our local rivers, ponds, and beaches. They degrade water quality, threaten aquatic resources, wildlife and human health, and cause the closure of beaches and shellfish beds. The goal of an Illicit Discharge Detection and Elimination (IDDE) program is to find and stop illicit discharges to the Municipal Separate Storm Sewer System (MS4) system. While IDDE can be one of the most challenging aspects of the MS4 permit program, it is also one of the most environmentally beneficial. For example, between 2005 and 2017, IDDE efforts by numerous communities eliminated over 75 million gallons per year of dry weather discharges of sewage into Boston Harbor and associated watersheds.

In the October 2017 issue of Stormwater News (see the link in the Toolkit below) we reviewed the three foundational IDDE components (regulatory mechanism, system map, and written IDDE program document) that must be in place and work together for an IDDE program to effectively prioritize, locate and remove illicit discharges. In this issue we take a closer look at developing and implementing an IDDE program, particularly in the early years of the 2016 Massachusetts small MS4 general permit term. This issue includes:

- *IDDE Toolkit* that highlights resources from EPA, MassDEP and others,
- *Tips from the Field,* a new feature in Stormwater News, focusing on outfall sampling in this issue, and
- *Timeline of Permit Requirements* that lists permit requirements, the due date, and where requirements can be found in the permit.

IDDE Toolkit

A Walk-Through of the Illicit Discharge Detection and Elimination (IDDE) Requirements of the 2016 Massachusetts and 2017 New Hampshire Small Municipal Separate Storm Sewer System (MS4) Permits, EPA Instructional Video NEW
https://www.youtube.com/watch?v=Br8ujFKAMd4&feature=youtu.be

Understanding Illicit Discharge Detection and Elimination (IDDE), Massachusetts Stormwater News, October 2017
https://www3.epa.gov/region1/npdes/stormwater/ma/ma-stormwater-news-oct-2017.pdf

Toolkit continues on page 2.

[1]An illicit discharge is a discharge to an MS4 that is not composed entirely of stormwater except discharges pursuant to a NPDES permit and discharges resulting from fire-fighting activities. (40 CFR 122.26(b)(2)

IDDE Toolkit (cont.)

EPA New England Bacterial Source Tracking Protocol
https://www3.epa.gov/region1/npdes/stormwater/ma/epa-ne-bacterial-source-tracking-protocol.pdf

MS4 IDDE Template: Illicit Discharge and Detection (IDDE) Plan, 2016, Central Massachusetts Regional Stormwater Coalition (CMRSWC)
https://www.centralmastormwater.org/toolbox/pages/idde-template-resources

Find and Fixing Illicit Discharges (IDDE 301), EPA Recorded Webinar, 2009
https://www.youtube.com/watch?v=DSLjLJh_Voc

Outfall Inspection and Sampling Standard Operating Procedure and Templates, 2016, CMRSWC
https://www.centralmastormwater.org/toolbox/pages/standard-operating-procedures

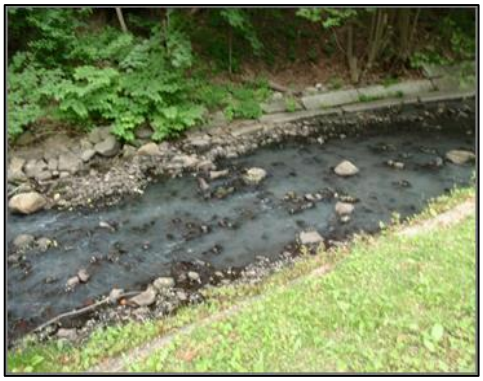
As always, EPA and MassDEP staff are available to assist you:
EPA, Newt Tedder: tedder.newton@epa.gov or 617-918-1038
MassDEP, Fred Civian: frederick.civian@state.ma.us or 617-292-5821

Planning and Program Development

An efficient and effective IDDE program begins with planning. A robust planning effort, especially when done early in the permit term, can help you:

- Develop an appropriate budget for the program,
- Access, compile, and utilize information and data to make informed decisions,
- Engage the staff and departments that have IDDE program responsibilities,
- Thoughtfully assign resources and staff time for maximum program benefit,
- Effectively prioritize and target screening, sampling and other investigations,
- Avoid duplication of effort and waste of resources, and
- Efficiently organize, manage, and analyze your IDDE program data for implementation and reporting.

IDDE is about finding and fixing illicit discharges to help improve water quality. With limited resources to get that done, planning tools become increasingly essential. One important IDDE planning tool is your written program document.



Robust planning increases the efficiency and effectiveness of efforts to find and stop the illicit discharges that pollute our local waters.

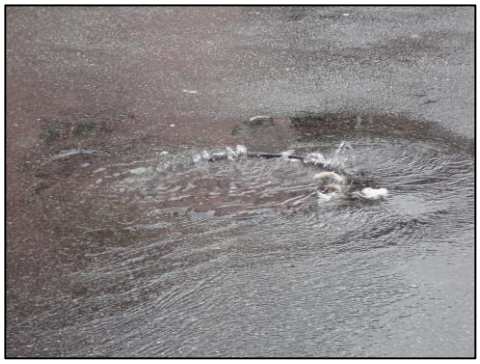
Written Illicit Discharge Detection and Elimination Program Document

Permittees are required to describe their IDDE program in a written document as noted in Part 2.3.4.6 of the permit. The IDDE program document must be prepared by July 1, 2019 and include specific contents as described in the permit. While the complete program document may be a single document or a collection of documents, it is a compilation that includes Standard Operating Procedures (SOPs), protocols, and other information related to your IDDE program. IDDE program documents can be written in either hard copy or electronic format and are likely to be a combination of both. For instance, electronic items such as maps, spreadsheets, inspection reports and SOPs can be referenced in your IDDE program document by their document/file name and/or the web address URL. Your IDDE program document is a component of your Stormwater Management Program (SWMP). It can be a standalone document that is linked to in your SWMP or it may be added to the SWMP directly. The language in the permit is intended as a detailed outline to assist in the writing of your community-specific IDDE program.

Among the required contents, your IDDE document must identify the departments or offices responsible for meeting IDDE requirements. The responsibilities for permit implementation often fall on more than one department within an MS4. Understanding and clearly documenting who is responsible for each requirement will establish accountability, promote coordination, and reduce duplication of effort.

Written Illicit Discharge Detection and Elimination Program Document (cont.)

As one example, the permit requires MS4s to keep an Inventory of Sanitary Sewer Overflows (SSOs). Do you know who manages the sanitary sewer system in your community? Establish and maintain communication with that department to ensure you receive SSO information and confirm that SSOs are reported as required to EPA and MassDEP. Up-to-date information about SSOs is also helpful in identifying those areas in the system that may be at greater risk for an illicit discharge. Similarly, a Board of Health may have details about areas with aging or failing septic systems that may have a higher likelihood for illicit discharges.



An SSO flows on to a city street.

Your IDDE program document also must set out the investigative procedures you plan to use, including at a minimum, those for dry weather outfall screening, outfall sampling, and catchment investigations. Don't reinvent the wheel. Use the available protocols and templates that are applicable to your community. Templates of SOPs are available for free online from EPA's Stormwater Tools in New England website (https://www.epa.gov/npdes-permits/stormwater-tools-new-England) and can be customized to fit your situation. Keep in mind that any template that you use must align with the requirements of the 2016 permit. Use of the EPA New England Bacterial Source Tracking Protocol is encouraged to ensure efficient and cost-effective testing of outfalls.

Creating standard IDDE protocols helps ensure consistency in investigative implementation and reduce potential variability in data collection. This is important for recordkeeping, data management, and potential enforcement action. Standardized procedures that include a system for data management will also help ensure system data is retained and can be efficiently accessed and used as needed for implementation and annual reporting to EPA and MassDEP. Finally, standard written protocols can also ease staffing transitions, ensure the continuity of operations by capturing institutional knowledge in advance of retirements, and provide a resource for training new employees.

System Map

An effective IDDE program starts with clear and accurate mapping. An accurate map serves several functions, including helping MS4s to:

- Improve analysis of their system to make informed resource allocations and implementation decisions,
- Improve the planning and prioritizing of outfall screenings, and
- Increase the efficiency and lower the cost of catchment investigations.

Your map can be prepared in either hard copy or electronic (digital) format, but it must be drawn to a scale that will allow you, EPA and MassDEP to readily understand your system. To facilitate this, a Geographic Information System (GIS) is a valuable tool for gathering, depicting and analyzing spatial information in a computerized system. With a digital map, typically based in a GIS platform, it's easy to store, collect and maintain MS4 data. Such digital systems can be used to create an inventory of stormwater assets, manage sampling information, and track IDDE program progress. Spatial features and descriptive attributes can be readily added to a digital map, allowing you to efficiently keep your map up-to-date as new information becomes available. A GIS system can also be used to delineate catchment areas and aid in tracing pollution upstream to its source.

Interactive digital maps allow you to turn on data layers that can provide helpful information for your IDDE program. For example, turning on a historic topographic map along with a land-use or zoning data layer can be helpful when looking for outfalls that may be within an area that was developed over 40 years ago, and thus be at a greater risk for having illicit connections. Data layers and other mapping resources may be available from state agencies, regional planning commissions and stormwater coalitions.

While not required by the permit, a robust GIS can be a powerful tool to improve decision making, produce compelling visuals to describe a problem or explain a funding request, or otherwise share information with decision makers and other community members.

GPS Equipment Loan & On-site Training Program

EPA has a limited number of Global Positioning System (GPS) units available to loan, at no cost, for stormwater mapping. EPA will also provide on-site training on the use of the GPS equipment. For more information contact Deborah Cohen at cohen.deborah@epa.gov.

Outfall Investigations

Outfalls are investigated to detect the presence of pollutants from illicit discharges. The findings from these investigations set the direction for the IDDE program. The first step in the process is to rank your outfalls.

Ranking helps direct resources to areas presenting the greatest risk.

Ranking of outfalls

Ranking helps establish priorities and direct resources to those areas presenting the greatest risk. An initial ranking of outfalls that will be used to prioritize dry weather screening must be done by July 1, 2019.

An inventory of outfalls provides the ranking framework. Four ranking categories (Problem, High Priority, Low Priority, and Excluded) are specified in the permit. The permit also includes lists of characteristics that help to predict an outfall's potential for illicit discharge and distinguish among outfalls and catchments for ranking.

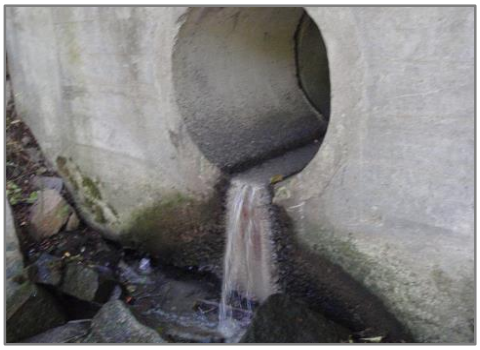
Ranking is used to compare outfalls and help you:

- Identify outfalls that may not require screening. Dry weather screening is not required of outfalls where illicit discharges are already known or suspected ("Problem Outfalls") or where no potential for an illicit discharge exists, as defined in the permit ("Excluded Outfalls").
- Identify areas that are most likely to have illicit discharges, as well as those of lower priority. As examples, some newly developed areas with less likelihood of leaking sewer pipes and cross connections may be assigned a lower priority while areas with older infrastructure will be a higher priority.
- Rank as "High Priority" those outfalls that discharge to public beaches, near drinking water supplies or shellfish beds, or to waterbodies impaired for bacteria.
- Prioritize catchment investigations. Avoid spending years investigating catchments with low discharge potential while riskier catchments and potential illicit discharges go uninvestigated.

Follow-up ranking based on the results of the dry weather screening and sampling must be done by July 1, 2021. The follow-up rankings help you direct resources to areas presenting the greatest risk and are the most significant factor to consider when prioritizing outfalls and scheduling catchment investigations. Outfall rankings must be updated annually and submitted with your annual report. An example of a template that can be used to input screening/sampling data and rank outfalls is the *Outfall Inventory Template* that has been developed by EPA and will be available in May for download from the EPA Stormwater Tools in New England website noted in the Additional Assistance Resources box on page 5. This template can be used for reporting purposes by submitting it with your annual report.

Screening of outfalls

Outfalls are screened to collect data about the outfall (e.g., dimensions, receiving water, spatial location) and to inspect for flow or other signs of an illicit discharge. In dry weather screening, outfalls are inspected for dry weather flow, odor, and other indicators of contamination with sanitary sewage, such as the presence of white or gray filamentous bacterial growth that is common (but not exclusively present) in outfalls contaminated with sanitary sewage.



Consider the changing conditions when making plans to sample.

Seasons, weather, and even time of day play an important role in planning a screening or sampling event. Get an early start and plan around the changing conditions to ensure permit deadlines will be met. Less foliage during the spring makes it easier to find outfalls and walk near water bodies, but high water tables and snow melt are more likely to submerge outfalls, making it difficult to inspect them for dry weather flow. Conversely, during the summer months, while plant growth can make it more challenging to locate outfalls and access the shoreline, water tables are typically lower, making outfalls less likely to be submerged and easier to inspect for dry weather flows. Part 2.3.4.7 of the permit includes details on the requirements for dry weather screening.

Outfall screening will eliminate outfalls that do not require sampling and identify those that do. When dry weather flow is detected at an outfall, you must collect samples for analysis.

Outfall Investigations (cont.)

Sampling of outfalls

Part 2.2.4.7 of the permit includes requirements for outfall sampling and analysis. Your program document must include the procedures you will use for conducting dry weather screening, including the use of field kits; sample collection, storage and handling; and the collection and storage of field data. As you plan for sampling, consider the ***Tips from the Field*** found later in this issue of Stormwater News.

Reporting and Data Management

Permittees must track and evaluate IDDE program implementation and report annually to EPA and MassDEP on their progress. As discussed throughout this issue of Stormwater News, an organized system is essential for managing the many field forms, analyses, inventories, maps, and other data that is associated with an IDDE program. Setting up tables or spreadsheets that provide a cumulative record to date will make program evaluation, tracking, and reporting easier for all parties involved.

A comprehensive data management system helps promote effective program implementation, facilitate evaluation, and organize the information required to be submitted in the annual report to EPA and MassDEP. A system is likely to include data that is in hard copy and electronic files, and potentially linked to a GIS or other digital system. Track the information you're required to record and submit in your annual report, and use templates, inventories and other systems applicable to your situation. Annual reporting of IDDE implementation information can be done through web links to the tracking information or submittal of the tracking spreadsheets kept by each permittee.

Additional Assistance Resources from EPA and MassDEP

Stormwater Tools in New England Website
Find the latest tools, resources, and updates on upcoming training opportunities.
https://www.epa.gov/npdes-permits/stormwater-tools-new-england.

Soak Up the Rain Webinars **NEW**

- *Reaching Public Consensus: Stormwater Funding in Ashland, Massachusetts*
  May 14, 2019, 1:30-3:00 PM EST To register: https://register.gotowebinar.com/register/9071694805589877506
- *Smart Cities and Parks: Resilient Environmental Design and Infrastructure in Chelsea, Massachusetts*
  June 12, 2019, 1-2:30 PM EST To register: https://register.gotowebinar.com/register/5846926157926349826

Public Education and Outreach Program
The MS4 Permit requires each town to implement a public education and outreach program that reaches four different audiences and that includes messages that are most relevant to that community. Town officials can click on DEP's link below to download – and save – brochures, pamphlets and other materials and use those to help comply with Section 2.3.2.c of the MS4 permit:
https://go.usa.gov/x5dgr

For "hands on" MS4 training and assistance for your community, call MassDEP's Stormwater Coordinator Fred Civian at 617-292-5821.

Resources and Contacts

Specific questions about the permit should go to:
EPA: Newt Tedder - tedder.newton@epa.gov or 617-918-1038
MassDEP: Fred Civian - frederick.civian@state.ma.us or 617-292-5821

Massachusetts Stormwater News is a collaborative effort of MassDEP and the New England office of the U.S. EPA. Suggestions for future topics, questions or assistance, or requests to be added or removed from the Stormwater News mailing list can be sent to: StormwaterNewsMA@epa.gov.

Massachusetts Statewide Education Program

Think Blue Massachusetts is a statewide educational campaign run by the Massachusetts Statewide Municipal Stormwater Coalition to help residents and businesses do their part to reduce polluted runoff and keep Massachusetts lakes, rivers, and streams clean and healthy. Learn more at www.thinkbluemassachusetts.org

Tips from the Field: Outfall Sampling

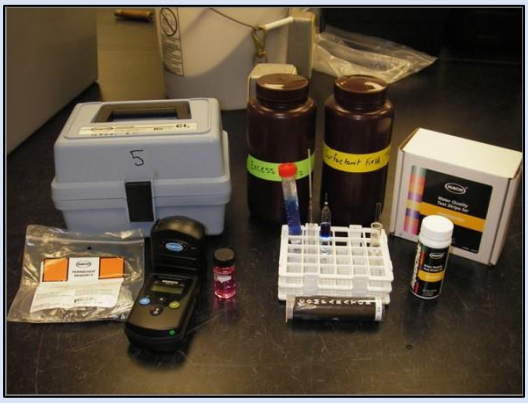
Before You Go Out

You may be able to rely on screening that was conducted under the 2003 permit if it meets the requirements of the new permit. Refer to Section 2.3.4.7.b.iv.

- ✓ Be familiar with your system. You may already know that half of your outfalls are unlikely to have any dry weather flow. Knowing ahead of time which outfalls are likely to have dry weather flow can make your sampling day more efficient and allow you to visit and collect samples from more sites.

- ✓ Coordinate sample delivery wih the analytical lab to confirm delivery day and the expected number of samples.

- ✓ Know your receiving water and its current impairments to ensure you are sampling for the correct pollutant(s) of concern. See Appendix G of the permit to match up required samples to the current impairment(s). The current impairment (303(d)) list can be found here: https://www.mass.gov/lists/integrated-lists-of-waters-related-reports



Prepare sampling equipment and supplies

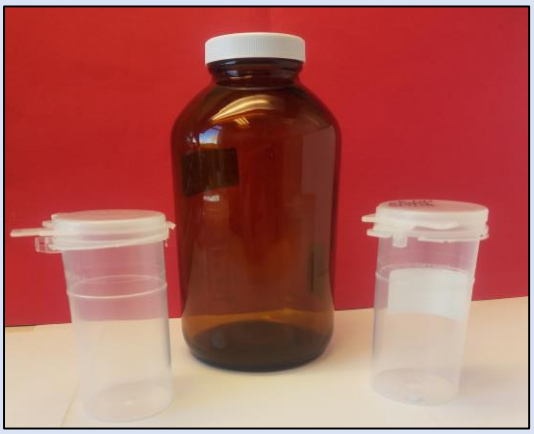
- ✓ Identify additional sample locations in case an outfall you planned to sample is not flowing. The same outfall with dry weather flow in the spring when the water tables were high might not be flowing when your sample event is planned during the summer.

Prepare equipment and supplies

- ✓ Estimate the number of samples to be collected. While 10-15 may be a reasonable estimate, the actual number of samples collected will vary depending on factors such as local conditions, the experience of those collecting the samples, and the travel time between outfalls and to deliver samples to the analytical lab.

- ✓ Pre-label bottles to save time in the field.

- ✓ Bring extra sample bottles in case you find additional outfalls flowing that you can sample.



Containers used to collect samples

- ✓ Be prepared with clothing and footwear for different situations. For example, if you need to cross a stream or wade in water, the boots needed will vary depending on the depth of the water.

- ✓ Remember safety equipment, e.g. nitrile gloves, safety vest, safety cones etc., to make sure you can collect the samples properly and stay safe while doing so.

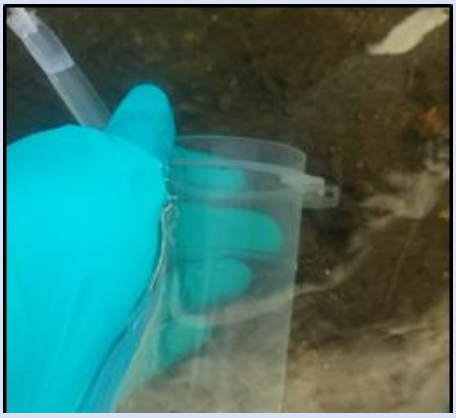
Tips from the Field: Outfall Sampling

Collecting the Sample

The key is to take a sample that is most representative of the current conditions. For example, you may take flow directly from the outfall, or, for a partially submerged outfall, take water below the surface depth immediately downstream of the outfall.

Some safety gear

- ✓ Always wear the appropriate safety gear. As one example, make sure your gloves are the required glove material based on the pollutant collection protocol.
- ✓ Take comprehensive notes and plenty of photographs.
- ✓ Collect your bacteria sample first and avoid disturbing sediment in the stream or at the bottom of the outfall.



Collection of the sample

- ✓ When taking the sample from a stream, do your best to dip the bottle completely below the surface, or wherever the water is well mixed. Skimming the water surface or dragging the channel bottom should be avoided if possible.
- ✓ Be careful when filling a sample bottle that contains small preservative tablets. When the flow is strong, tablets can easily fall out when filling the bottle.

- ✓ **NOTE:** Do not assume that an outfall with dry weather flow is uncontaminated just because it doesn't have obvious visual signs of contamination. The only way to be sure is to follow the screening and sampling protocol.

Keep samples cool

Use two coolers. Put a small amount of ice in the bottom of cooler 1, and fill cooler 2 entirely with ice. Place samples taken throughout the day in the ice in cooler 1, being sure the amount of ice is adequate to keep all samples cold. Once all samples are taken, fill cooler 1 with the remainder of the ice from cooler 2. Be sure to double check all labels before you fill cooler 1 with the ice that is remaining in cooler 2 to ensure they are filled out completely and appropriately.

Plan for traffic or other delays

- ✓ When taking samples, be prepared to move quickly and efficiently, especially if your goal is to collect 10-15 samples over the course of the day.
- ✓ The maximum time from bacterial sample collection to analysis is typically only 6 hours. Check with the lab that will be analyzing your samples to confirm time requirements.

Illicit Discharge Detection and Elimination: Timeline of Permit Requirements

When is the Deadline?	What is the Requirement?	Find in the Permit
End of Year 1 **(July 2019)**	**Written IDDE Program Document** Permittees must prepare a Written IDDE Program Document that describes their IDDE program. It must: • include a reference or citation to your legal authority, • identify the departments or offices responsible for specific program requirements, and • set out specific written procedures, including those for dry weather outfall screening and sampling, and catchment investigations**.** The IDDE Program Document can be prepared in either hard copy or electronic format. Your IDDE document can be a standalone document that is linked to in your Stormwater Management Program (SWMP) or added to the SWMP directly.	**Part 2.3.4.6**
	Inventory of Sanitary Sewer Overflows (SSOs) Permittees with sanitary sewer collection systems must keep an Inventory of Sanitary Sewer Overflows (SSOs) that have discharged to the MS4 within the previous 5 years. The inventory must include: • the location of each SSO, • whether the SSO discharge entered a surface water directly or through an MS4 outfall, • the date and time of each known occurrence, • the estimated volume of each discharge, • a description of each SSO event, indicating its known or suspected cause, • all completed mitigation and corrective measures, including dates of completion, and • all planned mitigation and corrective measures with implementation schedules. As described in Section 2.3.4.4.c, upon becoming aware of an SSO a permittee must notify EPA and MassDEP within 24 hours. The SSO Inventory must be updated annually. It can be a standalone document that is linked to in the SWMP or added to the SWMP directly.	**Part 2.3.4.4**
	Initial Ranking of Outfalls and Interconnections Permittees must perform an Initial Ranking of Outfalls and Interconnections. This ranking will be used to prioritize dry weather screening. An inventory provides the ranking framework and four categories (Problem, High Priority, Low Priority and Excluded) are used for ranking. Characteristics specified in the permit help to predict an outfall's potential for illicit discharge and distinguish among outfalls and catchment areas for ranking. Outfall rankings must be updated annually and submitted with the annual report (Part 2.3.4.7.a). **Note:** All data collected as part of the dry and wet weather catchment investigations shall be recorded and reported in each annual report. (Part 2.3.4.8.c.iii)	**Part 2.3.4.7**
	Employee Training Permittees must Train Employees involved in IDDE program implementation, at least annually. Training must include a review of IDDE program elements and teach employees how to recognize illicit discharges and SSOs.	**Part 2.3.4.11**

Illicit Discharge Detection and Elimination: Timeline of Permit Requirements

When is the Deadline?	What is the Requirement?	Find in the Permit
18 months **(December 2019)**	**Written Catchment Investigation Procedure** Permittees must prepare a Written Catchment Investigation Procedure that: • identifies the maps, historic plans, records, and other sources that will be used to identify catchment areas with a higher likelihood of an illicit connection or wet weather discharge, • includes a manhole inspection methodology for conducting both dry and wet weather investigations, and • establishes how illicit discharges will be isolated and confirmed. The written catchment procedure must be documented in the annual report.	**Part 2.3.4.8**
End of Year 2 **(July 2020)**	**Complete Phase I System Map** Permittees must complete their Phase I System Map. The Phase I map must include: • the locations of all outfalls and their receiving waters, • all open channel conveyances such as swales and ditches, • interconnections with other MS4s and storm sewer systems, for instance, where stormwater infrastructure such as pipes or other conveyances cross town boundaries, • municipally-owned stormwater treatment structures such as bioretention areas and detention basins, • waterbodies identified by name and all use impairments, and • initial catchment delineations, based on available data. System maps can be produced in either hard copy or electronic format.	**Part 2.3.4.5**
	Begin Investigations of Catchments with Problem Outfalls Permittees must Begin Investigations of Catchments with Problem Outfalls within two years of the permit's effective date. **Note:** All data collected as part of the dry and wet weather catchment investigations shall be recorded and reported in each annual report. (Part 2.3.4.8.c.iii)	**Part 2.3.4.8.a**
End of Year 3 **(July 2021)**	**Complete Dry Weather Screening and Sampling of Outfalls or Interconnections Initially Ranked as High or Low Priority** Permittees must complete Dry Weather Screening and Sampling of Outfalls or Interconnections Initially Ranked as a High or Low Priority within three years of the effective date of the permit. The results will be used for the follow-up ranking to reprioritize outfalls and interconnections for further investigation. All results shall be reported in each annual report. (Parts 2.3.4.7.b.iv and 2.3.4.7.b.v). **Note:** All data collected as part of the dry and wet weather catchment investigations shall be recorded and reported in each annual report. (Part 2.3.4.8.c.iii)	**Part 2.3.4.7**

Illicit Discharge Detection and Elimination: Timeline of Permit Requirements

When is the Deadline?	What is the Requirement?	Find in the Permit
End of Year 3 **(July 2021)**	**Perform Follow-Up Ranking of Outfalls and Interconnections** Permittees must perform Follow-Up Ranking of Outfalls and Interconnections based on the results of the dry weather screening. Follow-up ranking is the most significant factor used to prioritize outfalls and schedule catchment investigations.	**Part 2.3.4.7**
	Enact Legal Authority (New Permittees) *New permittees* must Enact Legal Authority through the adoption of a currently effective ordinance, by-law, or other regulatory mechanism to: • prohibit illicit discharges, • investigate suspected illicit discharges, • eliminate illicit discharges, including discharges from properties not owned by or controlled by the MS4, and • implement appropriate enforcement procedures and actions.	**Part 2.3.4.a**
End of Year 7 **(July 2025)**	**Complete Investigations of Catchments with Problem Outfalls and Outfalls/Interconnections Where Dry Weather Testing Identifies Likely Sewer Input** Permittees must Complete the Investigation of Catchments with Problem Outfalls and Outfalls/Interconnections where Dry Weather Testing identifies likely sewer input, including the completion of wet weather screening and investigations where at least 1 System Vulnerability Factor (SVF) was identified in the catchment area. (Part 2.3.4.8.c.i) **Note:** All data collected as part of the dry and wet weather catchment investigations shall be recorded and reported in each annual report. (Part 2.3.4.8.c.iii)	**Part 2.3.4.8.a**
End of Year 10 **(July 2028)**	**Phase II System Map** Permittees must complete their Phase II map. The Phase II map must include: • the latitude and longitude of all outfall spatial locations with a minimum accuracy of +/- 30 feet, • the location of all pipes, manholes and catch basins, • refined catchment delineations that reflect information collected during catchment investigations, • a municipal sanitary sewer system map (if available), and • a municipal combined sewer system map (if applicable).	**Part 2.3.4.5**

Illicit Discharge Detection and Elimination: Timeline of Permit Requirements

When is the Deadline?	What is the Requirement?	Find in the Permit
End of Year 10 **(July 2028)**	**Complete Investigations of Catchments with Problem, High-Priority or Low-Priority Outfalls** Permittees must Complete the Investigation of Catchments with Problem, High-Priority or Low-Priority Outfalls, within 10 years of the permit's effective date, including the completion of wet weather screening and investigations where at least 1 System Vulnerability Factor (SVF) was identified in the catchment area. (Part 2.3.4.8.c.i) **Note:** All data collected as part of the dry and wet weather catchment investigations shall be recorded and reported in each annual report. (Part 2.3.4.8.c.iii)	**Part 2.3.4.8.a**
Ongoing Screening	**Ongoing Screening** Upon completion of all catchment investigations pursuant to Part 2.3.4.8.c and illicit discharge removal and confirmation (if necessary) pursuant to paragraph 2.3.4.8.e, each outfall or interconnection shall be reprioritized for screening in accordance with Part 2.3.4.8.a and scheduled for ongoing screening once every five years.	**Part 2.3.4.10**